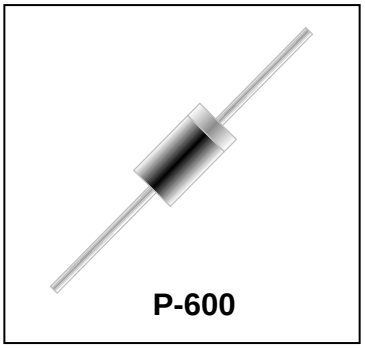
30KPxx(C)A

Power Transient Voltage Suppressor

Features

- 30000 watts Peak Pulse Power (10/1000μs)
- Unidirectional and Bidirectional Protection
- Fast Response Time: Typically < 1ns
- Excellent Clamping Capability
- Low incremental surge resistance
- Plastic package has Underwriters Laboratory Flammability classification 94V-0
- IEC 61000-4-2 (ESD) ±30kV(air), ±30kV(contact)
- MSL: Level 1



P-600

Mechanical Characteristics

- JEDEC P-600 molded plastic
- Polarity: Color band denoted cathode except Bipolar
- Marking : Marking Code
- Mounting Position: Any
- RoHS Compliant

Applications

- I/O Interfaces
- Power lines
- Automotive and Telecommunication
- Signal lines of sensor units for consumer
- Industrial Electronics
- Computer

Absolute Maximum Rating

Rating	Symbol	Value	Units
Peak Pulse Power (t_p =10/1000μs) (see Note1)	P_{PPM}	30000	W
Peak pulse current (10/1000μs) (see Note1)	I_{PPM}	See Electrical Characteristics	A
Power Dissipation on infinite heat sink T_L = 50 °C (Fig4)	P_D	10.0	W
Operating Junction Temperature range	T_J	-55 to +150	°C
Typical Thermal Resistance Junction to Lead	R_{uJL}	8.0	°C/W

Note1: Non-repetitive current pulse, per Fig.3 and derated above T_A=25°C per Fig.2.

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Electrical Characteristics

Part Number		Reverse Stand off Voltage V_{RWM}	Breakdown Voltage V_{BR}(Volts)@I_T		Test Current I_T	Maximum Clamping Voltage V_c@I_{PP}	Maximum Peak Pulse Current I_{PP}	Maximum Reverse Leakage I_R@V_{RWM}
UNI-POLAR	BI-POLAR	(V)	MIN	MAX	(mA)	(V)	(A)	(μA)
30KP28A	30KP28CA	28.0	31.28	34.57	50	50.0	606.0	5000
30KP30A	30KP30CA	30.0	33.51	37.04	50	55.2	548.9	5000
30KP33A	30KP33CA	33.0	36.90	40.78	50	58.5	517.9	5000
30KP36A	30KP36CA	36.0	40.20	44.43	50	61.8	490.3	5000
30KP39A	30KP39CA	39.0	43.60	48.19	20	67.2	450.9	2000
30KP42A	30KP42CA	42.0	46.90	51.84	10	72.0	420.8	1000
30KP43A	30KP43CA	43.0	48.00	53.05	10	73.0	415.1	1000
30KP45A	30KP45CA	45.0	50.30	55.59	5	77.4	391.5	250
30KP48A	30KP48CA	48.0	53.60	59.24	5	81.6	371.3	150
30KP51A	30KP51CA	51.0	57.00	63.00	5	86.4	350.7	50
30KP54A	30KP54CA	54.0	60.30	66.65	5	91.4	331.5	20
30KP58A	30KP58CA	58.0	64.80	71.62	5	92.4	327.9	20
30KP60A	30KP60CA	60.0	67.00	74.05	5	102.0	297.1	15
30KP64A	30KP64CA	64.0	71.50	79.03	5	104.0	291.3	10
30KP66A	30KP66CA	66.0	73.70	81.46	5	107.0	283.2	2
30KP70A	30KP70CA	70.0	78.20	86.43	5	109.0	278.0	2
30KP71A	30KP71CA	71.0	79.30	87.65	5	111.5	271.7	2
30KP72A	30KP72CA	72.0	80.40	88.86	5	114.0	265.8	2
30KP75A	30KP75CA	75.0	83.80	92.62	5	119.4	253.8	2
30KP78A	30KP78CA	78.0	87.10	96.27	5	129.0	234.9	2
30KP84A	30KP84CA	84.0	93.80	103.67	5	139.2	217.7	2
30KP90A	30KP90CA	90.0	100.50	111.08	5	146.4	207.0	2
30KP96A	30KP96CA	96.0	107.20	118.48	5	156.0	194.2	2
30KP102A	30KP102CA	102.0	113.90	125.89	5	165.6	183.0	2
30KP108A	30KP108CA	108.0	120.60	133.29	5	175.2	172.9	2
30KP120A	30KP120CA	120.0	134.00	148.11	5	194.4	155.9	2
30KP132A	30KP132CA	132.0	147.40	162.92	5	213.0	142.3	2
30KP144A	30KP144CA	144.0	160.80	177.73	5	223.2	135.8	2
30KP150A	30KP150CA	150.0	167.60	185.24	5	233.4	129.8	2
30KP156A	30KP156CA	156.0	174.30	192.65	5	245.0	123.7	2
30KP160A	30KP160CA	160.0	178.70	197.51	5	252.6	120.0	2
30KP168A	30KP168CA	168.0	187.70	207.46	5	272.4	111.2	2
30KP170A	30KP170CA	170.0	189.90	209.89	5	275.0	110.2	2
30KP180A	30KP180CA	180.0	201.10	222.27	5	290.4	104.3	2

Electrical Characteristics (Cont.)

Part Number		Reverse Stand off Voltage V_{RWM} (V)	Breakdown Voltage V_{BR}(Volts)@I_T		Test Current I_T (mA)	Maximum Clamping Voltage V_c@I_{PP} (V)	Maximum Peak Pulse Current I_{PP} (A)	Maximum Reverse Leakage I_R@V_{RWM} (μA)
UNI-POLAR	BI-POLAR		MIN	MAX				
30KP198A	30KP198CA	198.0	221.20	244.48	5	319.8	94.7	2
30KP216A	30KP216CA	216.0	241.30	266.70	5	348.6	86.9	2
30KP240A	30KP240CA	240.0	268.10	296.32	5	387.0	78.3	2
30KP258A	30KP258CA	258.0	288.20	318.54	5	416.4	72.8	2
30KP260A	30KP260CA	260.0	290.40	320.97	5	416.0	72.8	2
30KP270A	30KP270CA	270.0	301.60	333.35	5	436.2	69.5	2
30KP280A	30KP280CA	280.0	312.80	345.73	5	464.0	65.3	2
30KP288A	30KP288CA	288.0	321.70	355.56	5	469.9	64.5	2
30KP300A	30KP300CA	300.0	334.00	370.38	5	484.0	62.0	2
30KP320A	30KP320CA	320.0	357.40	391.40	5	530.0	57.2	2
30KP350A	30KP350CA	350.0	391.00	428.10	5	567.0	53.4	2

Typical Characteristics

Figure 1. Peak Pulse Power Rating Curve

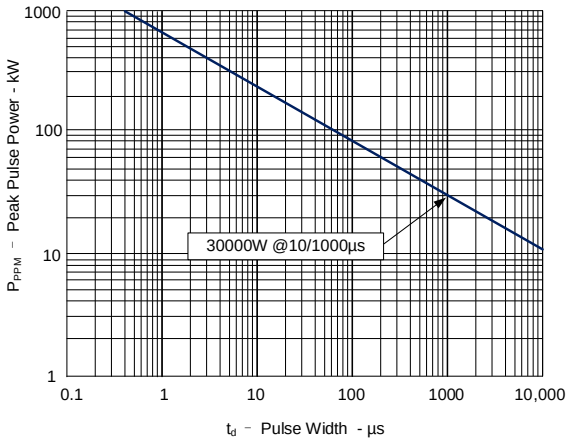


Figure 2. Pulse Derating Curve

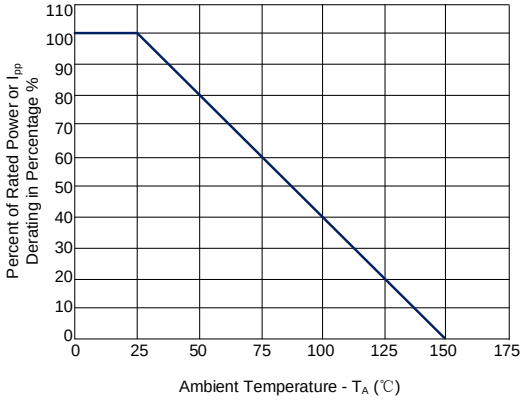


Figure 3. Pulse Waveform

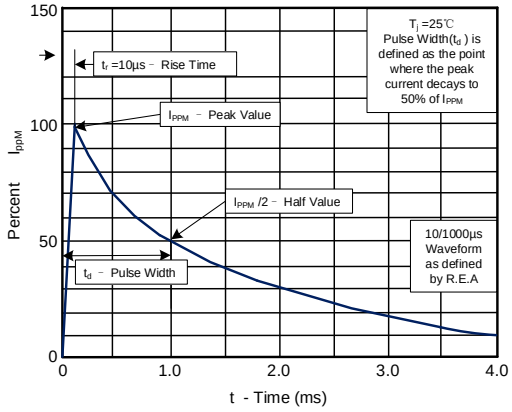
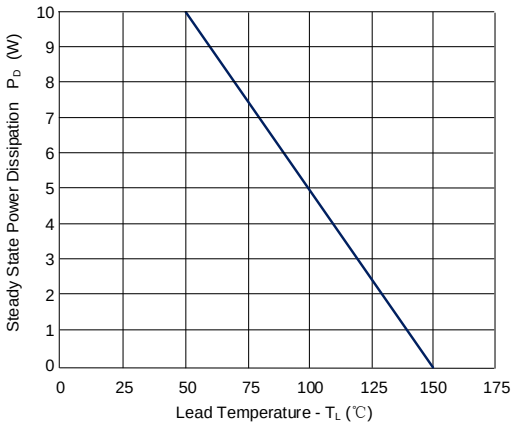
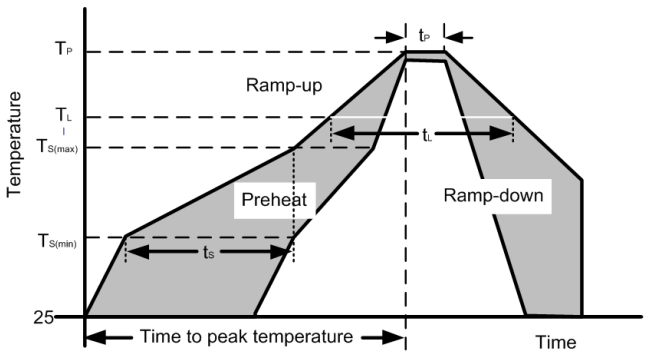


Figure 4. Steady State Power Dissipation Derating Curve



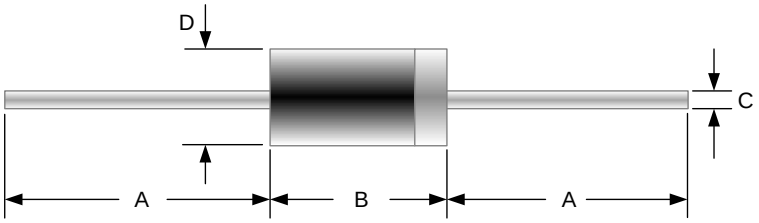
Soldering Parameters

Condition		
Pre-Heat	Temperature Min ($T_{S(min)}$)	150°C
	Temperature Max ($T_{S(max)}$)	200°C
	Time (min to max) (t_S)	60-190 s
Average ramp up rate (Liquidus Temp) (T_L) to peak		3°C/s max
Ts(max) to TL - Ramp-up Rate		3°C/s max
Reflow	Temperature (T_L) (Liquidus)	217°C
	Temperature (t_L)	60-150 s
Peak Temperature (T_P)		$260^{+0/-5}$ °C
Time within actual peak Temperature (t_p)		20-40 s
Ramp-down Rate		5°C/s max
Time 25°C to peak Temperature (T_P)		8 minutes max
Do not exceed		260°C

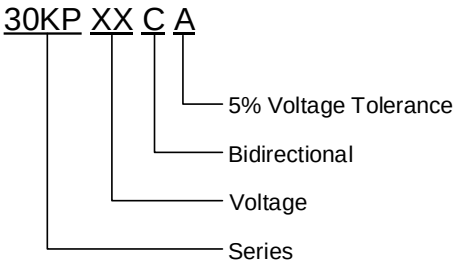


Outline Drawing – P-600

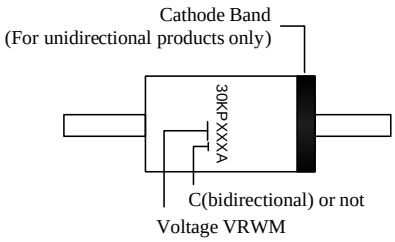
Ref.(mm)	Millimeters	
	Min.	Max.
A	25.40	-
B	8.60	9.10
C	1.22	1.32
D	8.60	9.10



Part Numbering System



Part Marking System



Package Information

Package Type	Description	Quantity (pcs)
P-600	Tape & Box	300

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The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.
Users should verify actual device performance in their specific applications.